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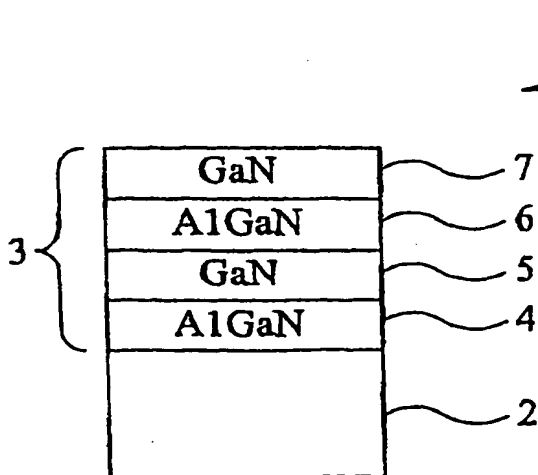
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(54) Title: MBE GROWTH OF AN ALGAN LAYER OR ALGAN MULTILAYER STRUCTURE



(57) Abstract: A method of growing an AlGaIn semiconductor layer structure by Molecular Beam Epitaxy comprises supplying ammonia, gallium and aluminium to a growth chamber thereby to grow a first (Al,Ga)N layer by MBE over a substrate disposed in the growth chamber. The first (Al,Ga)N layer has a non-zero aluminium mole fraction. Ammonia is supplied at a beam equivalent pressure of at least  $1 \cdot 10^{-4}$  mbar, gallium is supplied at a beam equivalent pressure of at least  $1 \cdot 10^{-8}$  mbar and aluminium is supplied at a beam equivalent pressure of at least  $1 \cdot 10^{-8}$  mbar during the growth step. Once the first (Al,Ga)N layer has been grown, varying the supply rate of gallium and/or aluminium enables a second (Al,Ga)N layer, having a different aluminium mole fraction from the first (Al,Ga)N layer to be grown by MBE over the first (Al,Ga)N layer. This process may be repeated to grown an (Al,Ga)N multilayer structure.

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,A	WO 02 103090 A (HOOPER STEWART EDWARD ;BARNES JENNIFER MARY (GB); BOUSQUET VALERIE) 27 December 2002 (2002-12-27) the whole document	1-21
X	WO 02 01608 A (ADVANCED TECH MATERIALS ;LANDINI BARBARA E (US); KEOGH DAVID M (US) 3 January 2002 (2002-01-03) page 14, line 9-14; claims 1-17, 48, 60, 61, 65, 87, 94-96	1-21
X	EP 1 061 564 A (SHARP KK) 20 December 2000 (2000-12-20) claims; figures 1,6	1-21
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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